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AUTHOR Jenkins, Jeanne E.; And Others
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ABSTRACT

The effects of parental separation and home environment factors on children's cognitive creative abilities, specifically in the area of divergent thinking, were studied. A total of 64 female and 52 male children from 58 single-parent families and 58 two-parent families enrolled in grades 3 through 5 participated in the study. Subjects were sampled from 65 elementary classes in seven central New York State school districts. A taped, auditory free-response exercise was used to measure divergent thinking. The groups of auditory stimuli consisted of both familiar and abstract sounds. Each group of stimuli was preceded by narrated instructions, encouraging the children to be imaginative, and followed by a silent period. Children's responses were scored for fluency, flexibility, and originality by two independent scorers. Achievement orientation, active-recreational orientation, intellectual-cultural orientation, and independence were measured using a modified version of the Family Environment Scale, which was completed by all parents of the subjects. Results indicate that there were no significant differences between the groups on any of the divergent thinking components and that active-recreational and intellectual-cultural orientations predicted fluency. Three data tables are included. (TJH)

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Jeanne E. Jenkins
Kent State University

Richard E. Ripple
Cornell University

Dalva E. Hedlund
Cornell University

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Parental Separation Effects and Family Influences on Children's Divergent Thinking Abilities

The purpose of the present study was to investigate the effects of parental separation and home environment factors on children's cognitive creative abilities. Specifically, the effects of parental separation and selected family orientations on children's divergent thinking abilities were studied.

For more than a decade, the rising divorce rate and the number of children involved has attracted the attention of researchers interested in potential adverse effects of divorce/parental separation on children. Much of the research has focused on the behavioral and academic competency levels of children. While the results have been mixed, there appears to be a general consensus among three longitudinal studies (Hetherington, Cox, & Cox, 1979, 1982; Guidubaldi, 1987; Wallerstein, 1984; Wallerstein & Kelly, 1976, 1980)that divorce leaves negative residuals for a period of time. Children from divorced families display more negative classroom behaviors and social problems than children from intact families. While girls seem to have less eventful behavioral and social adjustments than boys, Wallerstein provides some evidence to suggest the effects of divorce may be latent for girls.

Results from studies of divorce/parental separation effects on children's cognitive abilities are less conclusive than findings of behavioral outcomes. Hetherington (1982) found in her follow-up sample of preschool children that at two years following divorce, children in nondivorced families scored significantly higher than children in divorced families on performance IQ. Guidubaldi (1987) reported full scale IQ

differences between divorced and intact family children, in favor of the latter. Intact family children also scored significantly higher on achievement criteria. However, no significant effects of marital status were observed for academic criteria with family income controlled, suggesting the importance of the post-divorce family environment on children's cognitive expressions. Wallerstein discovered that half of the 131 children in an older latency cohort suffered a noticeable decline in school performance following divorce.

Divorce/parental separation effects on children's cognitive abilities are less clear when consideration is given to single-parent home environment factors (i.e. income) and the restricted range and type of abilities studied. However, the results from previous studies do present cognitive implications for children of divorce.

The parental separation experience and single-parent families may illuminate how different cognitive abilities respond under conditions of stress, change, and unpredictability. Since different abilities are nurtured under different conditions, it is reasonable to hypothesize that not all areas of cognitive functioning are affected to the same degree or direction. Few recent studies have examined the effects of divorce/parental separation, and more specifically, the single-parent family environment, on children's creativity-related abilities and characteristics. Yet, the early creativity literature discusses a relationship between father absence and creativity, and creativity as an adaptive response to stress. A popular approach over the years to the study of creativity has included the study of home environment characteristics. Such an approach suggests an important association

between the nurturance of creative abilities and the family environment. Divorce is a family process characterized by stress and change that may have its greatest impact on abilities more susceptible to potent home influences.

Previous studies suggest that children's creativity-related abilities are positively related to the parental separation experience. Creativity-related processes may represent adaptive cognitive resources children use or develop in response to stressful family stimuli. Early studies which explored the relationship between father absence and creativity found a high rate of parental loss among gifted and historically recognized figures (Albert, 1971; Besdine, 1968; Roe, 1953). Martindale's (1972) study more conspicuously united the theoretical consciousness of the times with this topic. Finding that 30 percent of a sample of 42 poets experienced father loss, he concluded that the relationship between father absence and creativity could be attributed to an unresolved Oedipal conflict.

More recently, Cornelius and Yawkey (1986) examined imaginativeness, a basic element of creative thought, in children of single-parent families. High levels of imaginativeness were found in preschoolers of single-parent families. Singer and Singer (1976), and Somers and Yawkey (1984) explain that imaginativeness is a primary resource which can be used by young children to cope with the developmental demands of growing up. The stress and change associated with single-parent families would be hypothesized to activate this adaptive developmental mechanism.

Wallerstein and Kelly (1980) also provide indirect evidence of a relationship between parental separation caused by divorce and creativity potential. They report that one year after divorce, older children were

observed to have a certain flexibility, more tolerance for change, and an enhanced capacity to delay gratification that distinguished them from their peers.

Previous findings suggesting a relationship between parental separation and creativity-related processes may be attributed to a freeing relationship created by parental loss. This emotional distancing has been found to characterize the family environments of creative children (Albert, 1971; MacKinnon, 1962; Miller & Gerard, 1979). Father departure may weaken external structure and control, factors conducive to the nurturance of creativity. Trauma of parental loss may be compensated in absence of parental coercion and domination. Exposure to the parental separation process would be expected to kindle an intensified variation of feelings, perceptions, and thoughts. These conditions positively influence creativity-related abilities.

Theoretical explanations for the relationship between parental separation and creativity emphasize the role of home environment factors. Accordingly, the present study further investigates the extent to which four family orientations (achievement, active-recreational, intellectual-cultural, and independence) influence single-parent children's divergent thinking abilities. Evidence for the importance of these factors in children's creative development is well documented (MacKinnon, 1962; Miller & Gerard, 1979).

Hypotheses

1. The divergent thinking abilities (fluency, flexibility, and originality) of single-parent children will be more well-developed in comparison with two-parent children.

2. The family orientations will prove significant in the prediction of single-parent children's divergent thinking abilities.

Method

Subjects

A total of 116 single- and two-parent family children enrolled in grades three through five participated in the study: 58 single-parent children (32 females, 26 males) and 58 two-parent children (32 females, 26 males).

Children were sampled from 65 elementary classes in seven central New York State school districts. Parent permission forms were sent to all families of children enrolled in the three grades. This method of selecting children was intended to provide a more representative group, as contrasted with procedures which use only clinical or special populaitons (e.g., Parents Without Partners), thus reducing the possibility of systematic bias. The sampling procedure also complied with nondiscriminatory school practices to avoid violating the confidentiality rights of parents and children.

Of the 1484 families contacted, forty percent responded favorably. From the group of consenting respondents, all single-parent children were included who resided in the custody of their mothers and whose parents had separated after they were three years of age. Children who had experienced father absence due to never-married mothers were excluded from the study. These exclusions were intended to confine causes of parental separation to marital incompatibility.

Single-parent, mother-custody children and two-parent children residing with both their biological parents were matched on grade, sex, income, and first grade reading achievement level.

Instruments

A taped, auditory free response exercise was used to measure divergent thinking (Jaquish & Ripple, 1980). This exercise is conceptually similar to Sounds and Images (Cunnington & Torrance, 1965). The groups of auditory stimuli consisted of both familiar and abstract sounds. Each group of auditory stimuli was preceded by narrated instructions (which encouraged the children to be imaginative) and followed by a silent period. Responses to the divergent thinking exercise were scored for fluency, flexibility, and originality independently by two scorers. Interscorer reliabilities were as follows: fluency = 0.98, flexibiity = 0.93, originality = 0.88. Support for the construct validity and reliability of the divergent thinking exercise is presented by Jaquish (1981) and Jaquish and Ripple (1980).

Achievement orientation, active-recreational orientation, intellectual-cultural orientation, and independence orientation were measured using a modified version of the Family Environment Scale (Moos, 1981). These family orientations assess the extent to which activities are cast into an achievement-oriented or competitive framework; the extent of participation in social and recreational activities; the degree of interest in political, social, intellectual, and cultural activities; and the extent to which family members are assertive and self-sufficient. Moos reports internal consistencies ranging from .61 to .78, and 12 month subscale stabilities ranging from .52 to .79. Internal consistency estimates

obtained for the study sample ranged from .57 to .73.

Procedure

The divergent thinking exercise was administered to small groups of children in self-contained locations in the schools. Total administration time was approximately 25 minutes. All parents whose children participated in the study were requested to complete the modified Family Environment Scale. Three follow-up procedures yielded a 93 percent return.

Results

Hypothesis #1

The strategy for data analysis of the first hypothesis represented a traditional group-difference approach. Potential confounding influences were minimized with a matching procedure which controlled for the effects of grade, sex, income, and a cognitive indicator (first grade reading achievement). Paired t-test comparisons among the two groups of children on the divergent thinking exercise indicated a comparable level of divergent thinking for this sample (Table 1). While the mean scores were slightly higher for the single-parent group, there were no significant differences between the two groups of children with respect to fluency ($t = 0.48$, $df = 57$, $p > .05$), flexibility ($t = 0.12$, $df = 57$, $p > .05$), and originality ($t = 0.41$, $df = 57$, $p > .05$).

Hypothesis #2

Correlational analyses revealed small, but statistically significant relationships between some of the family orientations and divergent thinking components. Stronger intellectual-cultural orientation related to higher fluency ($r = .26$, $p < .05$) and flexibility ($r = .37$, $p < .05$) scores. More emphasis and/or involvement in active-recreational activities

related to stronger fluency ($r = .27$, $p > .05$) and flexibility ($r = .32$, $p < .05$) scores. Results of the correlation analyses also revealed a significant relationship involving a control (matching) variable. Originality was significantly related to income ($r = .37$, $p < .05$).

To further examine relationships between the divergent thinking components and the family orientations, a series of regression equations were performed. In these analyses, the family orientations were used as independent variables in the presence of the matching variables (sex, grade, income, and first grade reading level) to predict children's divergent thinking abilities.

Results of these analyses indicated that the family orientations provided little information to the prediction of children's originality and fluency in the presence of the matching variables. None of the models for fluency were significant. Contrary to hypothesis 2, none of the family orientations contributed unique information to the prediction of originality. However, equations containing the matching variables proved to be significant, primarily as a function of the income variable (Table 2). When sex, income, grade level, and reading level were controlled, the active-recreational and intellectual-cultural orientations continued to contribute unique information to explain children's flexibility of thought (Table 3).

Discussion

Results of the group-difference analyses led to the rejection of hypothesis 1. For this sample of single- and two-parent children, there were no significant differences between groups on any of the divergent

thinking components. This finding implies that parental separation has no significant effect on the emergence or expression of children's fluency, flexibility, and originality. It is possible to speculate that the effects may be latent or that the expression of children's divergent thinking abilities is confined to content specifically concerning familial/interpersonal situations. Future research might explore different modalities and content for expression of divergent thinking abilities with single- and two-parent children.

Results of the correlation and multiple regression analyses provided some support for hypothesis 2. Individually, the active-recreational and intellectual-cultural orientations predicted fluency. The independence and achievement variables did not contribute information. These results suggest that an emphasis on outside interests and activities has more influence on single-parent children's range of thoughts than independence or achievement encouragement. This interpretation appears intuitively reasonable since the former two orientations might be expected to result in a wider range of experiences. While these orientations were significant, they accounted for only a small proportion of the variability in fluency. In the presence of the matching variables, none of the family variables contributed unique information to the prediction of children's fluency.

The active-recreational and intellectual-cultural orientations also influenced children's flexibility of thought, somewhat more so than for fluency. When sex, income, grade level, and reading level were taken into consideration, these family variables continued to contribute unique information to explain flexibility. As with fluency, an emphasis on achievement and independence were not predictive of children's flexibility.

It is possible that independence does not afford children the stimulation and experiences conducive for divergent thought that are provided by the interaction likely resulting from an emphasis on intellectual-cultural concerns and recreational involvement. The finding that an emphasis on achievement did not provide information to explain any of the divergent thinking components leads to a possible alternative explanation. It is possible that an emphasis on achievement encourages convergent processes, conformity to standards of performance, and confinement of thought to specific tasks. These characteristics might well be expected to inhibit divergent thought processes during the middle childhood years.

None of the family variables had a significant influence on single-parent children's originality. It will be recalled that income proved to be a significant predictor of originality. The financial situation of the single-parent home apparently exerts a stronger influence than the family orientations on children's ability to generate novel thoughts. More opportunities, resources, and experiences typically afforded by higher incomes may enhance the store of information available for conceptual restructuring. The greater store of information may serve as a kind of ideational data base.

Table 1

Differences Between Single- and Two-Parent Family Children in Divergent Thinking

Variable	Single Group (n=58) Mean	SD	Two Parent Group (n=58) Mean	SD	t
Fluency	18.97	7.99	18.38	7.17	0.48
Flexibility	13.24	3.94	13.17	3.81	0.12
Originality	4.11	2.62	3.92	2.45	0.41

***$p \leq .001$
df = 57

Table 2

Originality as Predicted by Family Orientations and Matching Variables

Model	Predictors	All Predictors Included		Change Between Models	
		R^2	p	R^2_{chg}	p
Initial	Matching	.23	.02*	--	--
Full	Matching + FAMARO	.24	.03*	.01	.37
Initial	Matching	.21	.02*	--	--
Full	Matching + FAMICO	.25	.02*	.04	.11
Initial	Matching	.21	.02*	--	--
Full	Matching + FAMAO	.22	.04*	.00	.62
Initial	Matching	.21	.02*	--	--
Full	Matching + FAMIND	.22	.04*	.01	.40
Initial	Matching	.23	.02*	--	--
Full	Matching + ALLFAM	.26	.09	.03	.72

*$p \leq .05$

Note. Variable Codes:

FAMAO: Family Achievement Orientation
FAMIND: Family Independence
FAMICO: Family Intellectual-Cultural Orientation
FAMARO: Family Active-Recreational Orientation

Table 3

Flexibility as Predicted by Family Orientations and Matching Variables

Model	Predictors	All Predictors Included		Change Between Models	
		R^2	p	R^2_{change}	p
Initial	Matching	.03	.37	--	--
Full	Matching + FAMARO	.12	.35	.08	.03*
Initial	Matching	.03	.88	--	--
Full	Matching + FAMICO	.15	.18	.12	.01**
Initial	Matching	.03	.88	--	--
Full	Matching + FAMAO	.07	.68	.04	.14
Initial	Matching	.03	.88	--	--
Full	Matching + FAMIND	.05	.86	.02	.36
Initial	Matching	.04	.86	--	--
Full	Matching + ALLFAM	.21	.22	.17	.05*

*$p \leq .05$
**$p \leq .01$

Note. n = 58

Variable Codes:
FAMARO: Active-Recreational Orientation
FAMICO: Intellectual-Cultural Orientation
FAMAO: Achievement Orientation
FAMIND: Independence
ALLFAM: All family variables included

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